

U.S. Ser. No. 10/702,299, filed Nov. 6, 2003

**PATENT
CASE 99-122US-DIV1**

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

IN RE APPLICATION OF:

James L. McGrath, et al.

**DIVISIONAL APPLICATION OF PRIOR
APPLICATION SERIAL NO.: 09/815,113**

FILED: November 6, 2003

FOR: Stitched LGA Connector

PRIOR EXAMINER: J. Harvey

PRIOR ART UNIT: 2833

ATTORNEY DOCKET NO.: 99-122US-DIV1

Mail Stop Patent Application
Commissioner for Patents
PO Box 1450
Alexandria, Virginia 22313-1450.

Dear Sir:

PRELIMINARY AMENDMENT

Prior to examination and calculation of the filing fee, please amend the above-identified new divisional application as follows:

) I hereby certify that this document along with any
) documents referred to as being attached, is being
) deposited with the United States Postal Service on
) the date shown below as Express Mail, first class
) mail, postage prepaid, in an envelope addressed to:
) Mail Stop Patent Application, Commissioner for
) Patents, PO Box 1450, Alexandria, Virginia
) 22313-1450.

) November 6, 2003
) Date

) Thomas D. Paulius
) Thomas D. Paulius
) Express mail EV 187772140 US

IN THE SPECIFICATION:

Page 1, line 1: Add the following new paragraph.

Reference to Related Applications

This application is a divisional application fo prior application Serial No. 09/815,113
filed March 22, 2001.

IN THE CLAIMS:

Cancel claims 1-24 and 48-57, without prejudice and add new claims 62-67.

A copy of the claims as amended follow.

1-24. (Cancelled)

25. (Original) A land grid array ("LGA") connector, comprising:

a connector frame supporting a flexible body portion of the connector, the body portion containing a plurality of conductive contacts arranged in an array, each contact extending through said flexible body portion, each contact being formed from a single strand of conductive wire that is bent upon itself to form a dual strand, open loop contact that has opposing first and second ends which project past respective first and second surfaces of said body portion such that each contact has a pair of interconnected, redundant circuit paths that extend between said contact first and second ends and which extend through said connector flexible body portion.

26. (Original) The LGA connector of claim 25, wherein said connector frame is a rigid member.

27. (Original) The LGA connector of claim 25, wherein said flexible body portion includes an fabric-reinforced elastomeric portion.

28. (Original) The LGA connector of claim 25, wherein said flexible body portion is reinforced by a reinforcing member.

29. (Original) The LGA connector of claim 25, wherein said body portion includes a plurality of openings formed therein and extending through said body portion, each of said openings receiving a single contact.
30. (Original) The LGA connector of claim 29, wherein said reinforcing member is a polymer film.
31. (Original) The LGA connector of claim 25, wherein said flexible body portion includes an extent of fabric that is encapsulated by an elastomer.
32. (Original) The LGA connector of claim 28, wherein said reinforcing member is sandwiched between two elastomeric layers, each of the elastomeric layers forming said first and second surfaces of said flexible body portion.
33. (Original) The LGA connector of claim 28, wherein said reinforcing member and said two elastomeric layers are laminated together.
34. (Original) The LGA connector of claim 28, wherein said reinforcing member includes a synthetic fabric extent that is coated with an elastomer.
35. (Original) The LGA connector of claim 30, wherein said reinforcing member is a polyamide film.
36. (Original) The LGA connector of claim 34, wherein said fabric is a fiberglass fabric

extent.

37. (Original) The LGA connector of claim 25, wherein each of said contacts is formed from an open loop of conductive wire, the first end of said contact having a closed loop end portion that is formed by bending said wire upon itself, and the second end of said contact including an open end portion with two free ends formed thereat.
38. (Original) The LGA connector of claim 25, wherein said contact first and second ends project away from said connector flexible body portion respective first and second surfaces at angles of less than 90 degrees.
39. (Original) The LGA connector of claim 38, wherein all of said contact first ends are arranged at a same angle with respect to said connector flexible body portion first surface.
40. (Original) The LGA connector of claim 25, wherein said connector frame includes an interior opening in which said flexible body portion is supported, and said connector frame further includes a plurality of cavities formed therein communicating with said connector frame interior opening, the cavities forming locations at which said connector flexible body portion engages said connector frame.
41. (Original) The LGA connector of claim 25, wherein said wire is bent upon itself at a radius of said contact first to form a contact point for contacting a first opposing circuit component and said free ends of said contact second end form a line for contacting a

second opposing circuit component.

42. (Original) The LGA connector of claim 25, wherein each of said contacts is disposed in an opening formed in said body portion and oriented therein such that said dual strands lie on opposite sides of corresponding centerlines of said openings.

43. (Original) An electrical connector for providing a connection between two circuit components, comprising:

a connector frame, the frame having an interior opening disposed therein, said frame extending completely around the interior opening such that interior edges of said frame define a perimeter of said interior opening;

a flexible body portion supported within said frame opening, the flexible body portion including an elastomeric portion, said flexible body portion further including a plurality of conductive contacts disposed in said flexible body portion that extend through said flexible body and which further terminate in opposing first and second ends that project past respective first and second surfaces of said body portion;

said frame having a plurality of anchoring cavities formed therein which communicate with said interior opening, said flexible body portion elastomeric portion extending into said anchoring cavities to anchor said flexible body portion to said connector frame.

44. (Original) The connector of claim 43, wherein said flexible body portion includes a reinforcement portion formed therewith.

45. (Original) The connector of claim 44, wherein said reinforcing member is a fabric extent.
46. (Original) The connector of claim 44, wherein said reinforcing member is a film extent.
47. (Original) The connector of claim 43, wherein each of said contacts is formed from a length of conductive wire that is bent upon itself to form an open loop at one end thereof and a pair of redundant, conductive paths that extend between opposing ends of said contact.
- 48-57. (Cancelled)
58. (Original) A connector comprising:
an insulative housing supporting a body portion, the body portion having a plurality of individual openings formed therein, each of the openings containing a contact therein, each of the contacts having first and second ends that project past edges of said body portion, the contacts being stitched into said body portion by way of an insertion tool.
59. (Original) The connector of claim 58, wherein said housing and body portion are formed from the same material.
60. (Original) The connector of claim 58, wherein said body portion is formed from one

extent of a polyimide film.

61. (Original) The connector of claim 58, wherein each of said contacts includes a stamped and formed contact.
62. (Newly Added) The connector of claim 58, wherein each of said contacts includes a solder ball attached to both of said contact first and second ends.
63. (Newly Added) The connector of claim 58, wherein each of said contacts includes a solder ball attached to said contact second end.
64. (Newly Added) The connector of claim 43, wherein each of said contacts includes a solder ball attached to both of said contact first and second ends.
65. (Newly Added) The connector of claim 43, wherein each of said contacts includes a solder ball attached to said contact second end.
66. (Newly Added) The connector of claim 25, wherein each of said contacts includes a solder ball attached to both of said contact first and second ends.
67. (Newly Added) The connector of claim 25, wherein each of said contacts includes a solder ball attached to said contact second end.

REMARKS

This application is a divisional application of application Serial No. 09/815,113, filed on March 22, 2001. In that parent application, a restriction requirement was raised by Examiner J. Harvey and claims 25-41, 43-47 and 58-61 were cancelled.

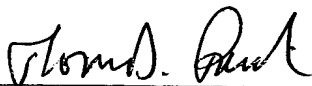
Applicants now file this divisional application and have cancelled the claims that were prosecuted in the prior parent '113 application and present original claims 25-47 and 58-61 for prosecution as well as new claims 62-67.

Applicants respectfully request the Examiner to provide, in the first Office Action in this application a statement in accordance with MPEP § 609 indicating that the Examiner has considered all of the art previously cited in the parent '113 application.

Respectfully submitted,

MOLEX INCORPORATED

Date: 6 November 2003

By: 
Thomas D. Paulius
Registration No. 30,792

2222 Wellington Court
Lisle, Illinois 60532
Tel.: (630) 527-4897
Fax.: (630) 416-4962